

Patent Claims

1.A wheel bearing unit embodied as an angular contact ball bearing with a central axis, comprising:

- at least two first rows of bearing balls,
- at least two second rows of bearing balls, the second rows being arranged parallel to the first rows,
- an outer ring assembly extending around all the balls together radially on the outside,;

a first pairing formed from a first one of the first rows of balls and from a first one of the second rows of balls, in and each first pairing being preloaded against a second pairing formed from a second one of the first rows of balls and from a second one of the second rows of balls, the outer ring having located axially on each side of a radially inwardly projecting rim a first inner raceway for one of the first rows of balls at one axial side of the rim and a second inner raceway, adjacent to the first inner raceway, for one of the second rows of balls at the other axial side of the rim.

2. The wheel bearing unit as claimed in claim 1, wherein the rows of balls are so placed that a greatest diameter of an imaginary first reference circle passing through centers of the balls of the first rows and running around the central axis is smaller than a

greatest diameter of an imaginary second reference circle passing through the centers of the balls of the second rows and running around the central axis.

3. The wheel bearing unit as claimed in claim 1, wherein the balls of the first row have a smaller ball diameter than the balls of the second row.

4. The wheel bearing unit as claimed in claim 1, wherein the second inner raceway has a side axially facing away from the first inner raceway, a diameter constriction in the second inner raceway adjoining the side of the second inner raceway axially facing away from the first inner raceway; , and the second inner raceway merging with the diameter constriction and a greatest free inside diameter of the second inner raceway being greater than a smallest free inside diameter of the diameter constriction.

5. The wheel bearing unit as claimed in claim 1, further comprising at least one inner ring radially inward of the rows of balls, the at least one inner ring having at least one first outer raceway and one second outer raceway for one of the pairings of the rows of balls.

6. The wheel bearing unit as claimed in claim 5, comprising at least two of the inner rings each receiving a respective one of the rows of balls.

7. The wheel bearing unit as claimed in claim 5, further comprising a radially outwardly projecting outer rim on the at least one inner ring, the outer rim adjoining the second outer raceway in the direction away from the first outer raceway and the outer rim having a maximum outer rim diameter which is greater than all other greatest outside diameters of the inner ring which are adjacent to the outer rim toward the first outer raceway.

8. The wheel bearing unit as claimed in claim 7, further comprising a radial, raceway superelevation disposed axially between the first outer raceway and the second outer raceway, the second outer raceway merging with the raceway superelevation in the direction of the first outer raceway, and a smallest outside diameter of the second outer raceway being smaller than a smallest outside diameter of the raceway superelevation.

9. The wheel bearing unit as claimed in claim 7, further comprising at least the balls, the outer ring and

the at least one inner ring being combined in a subassembly which holds together;

a flange body, the at least one inner ring being arranged concentrically on a the flange body, the at least one inner ring bearing axially against the flange body and being held axially and a radially outwardly facing flanged rim pressed axially against an end of the inner ring and holding the inner ring axially.

10. The wheel bearing arrangement as claimed in claim 9, wherein two of the inner rings having ends touching one another, and the two inner rings end are arranged on the flange body, a flange rim prestressing the two inner rings against one another axially, wherein one of the inner rings is pressed axially against the flange body.

11. The wheel bearing unit as claimed in claim 1, wherein pressure angles are enclosed between a contact line of the angular contact ball bearing and an imaginary plane at right angles to the central axis, the pressure angles are the same as one another in their absolute angular degree value from a first row of balls to a second row of balls in a respective one of the pairings.

12. The wheel bearing unit as claimed in claim 1, wherein pressure angles are enclosed between the a contact line of the angular contact ball bearing and an imaginary plane at right angles to the central axis, the pressure angles differing from one another in their absolute angular degree value between the first and second rows of balls in a pairing.

13. The wheel bearing unit as claimed in claim 1, wherein contact lines of the angular contact ball bearing have axial spacing from one of the pairings to another of the pairings and which increases toward the central axis.

14. The wheel bearing unit as claimed in claim 1, further comprising at least one fastening element for a surrounding environment of the wheel bearing unit.

15. The wheel bearing unit as claimed in claim 14, wherein the fastening element comprises a radially extending flange.

16. The wheel bearing arrangement as claimed in claim 14, wherein the fastening element comprises at least one projection which is in one piece with the outer

ring, the projection protruding radially outward from the outer ring.

17. The radial bearing unit as claimed in claim 16, wherein the fastening element comprises a flange running around the central axis and the flange having a number of flange holes which are spaced in relation to one another at a periphery of the flange.